



CALS TEST NETWORK

# AFCTN Test Report 94-023

AFCTB-ID  
93-063



## Technical Publication Transfer

Using:



Raytheon Electronics' Data



MIL-D-28000A (IGES)  
MIL-M-28001A (SGML)



Quick Short Test Report



18 June 1993

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Prepared for

Electronic Systems Center

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**Quick Short Test Report**

**18 June 1993**

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**DTIC QUALITY INSPECTED 3**

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1. APPROVED FOR RELEASE

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# **1. Introduction**

## **1.1 Background**

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-Cycle Support (CALs) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALs standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALs initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

## 1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Raytheon Equipment Division's interpretation and use of the CALS standards, in transferring technical publication data. Raytheon used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape, as a test tape and not a contractual deliverable.

---

## 2. Test Parameters

**Test Plan:** AFCTB 93-063

**Date of  
Evaluation:** 18 June 1993

**Evaluator:** George Elwood  
Air Force CALS Test Bed  
DET 2 HQ ESC/AV-2P  
4027 Colonel Glenn Hwy  
Suite 300  
Dayton OH 45431-1672

**Data  
Originator:** Esther Paris  
Raytheon  
Equipment Division  
1001 Boston Post Road  
Marboro MA 01752  
(508) 490-2022

**Data  
Description:** Technical Manual Test  
1 Document Declaration file  
1 Document Type Definition (DTD)  
2 Initial Graphics Exchange Specification  
(IGES) files  
1 Text/Standard Generalized Markup Language  
(SGML) file

**Data  
Source System:**

1840

**HARDWARE**

Unknown

**SOFTWARE**

Unknown

IGES

**HARDWARE**

Unknown

**SOFTWARE**

IDA's IGESView



---

Text/SGML

**HARDWARE**

Unknown

**SOFTWARE**

ArborText

**Evaluation Tools Used:**

**MIL-STD-1840A (TAPE)**

SUN 3/280

AFCTN Tapetool v1.2.9 UNIX

XSoft CAPS/CALS v40.4

Texas Instruments (TI) Tapetool v1.0.1

PC 486/50

AFCTN Tapetool v1.2.9 DOS

**MIL-D-28000 (IGES)**

Sun SparcStation 2

ArborText iges2draw

Carberry CADLeaf Plus v3.1

IGES Data Analysis (IDA) Parser/Verifier v92

IDA IGESView v3.05

International TechneGroup Incorporated

(ITI) IGES/Works v1.3

Rosetta Technologies Preview v3.2

PC 486/50

AUTODESK AutoCAD 386 R12

AUTODESK Micro Engineering Solutions

(MES) CheckMark v1.0

Cadkey Cadkey v5.02

IDA IGES Parser/Verifier v92

IDA IGESView Windows

Rosetta Technologies Preview

**MIL-M-28001 (SGML)**

SUN SparcStation 2

ArborText ADEPT v4.2.1

PC 486/50

Exoterica XGMLNormalizer v1.2e3.2

Exoterica Validator v2.0 exl

McAfee & McAdam Sema Mark-it v2.3

Public Domain sgmls

**Standards**

**Tested:**

MIL-STD-1840A

MIL-D-28000A

MIL-M-28001A

### 3. 1840A Analysis

#### 3.1 External Packaging

The tape was hand delivered to the Air Force CALS Test Bed (AFCTB). It was not enclosed in a box in accordance with ASTM D 3951. The exterior packaging could not be evaluated.

The tape was not enclosed in a barrier bag or barrier sheet material as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed the label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. A packing list, showing all files recorded on the tape, was not enclosed with the tape.

#### 3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

##### 3.2.1 Tape Formats

The tape was run through the AFCTN *Tapetool* v1.2.9 utility. Thirteen errors and two notes were encountered while evaluating the contents of the tape labels. All of the errors relate to the use of upper and lower case letters in the tape headers and EOF markers. ANSI X3.27 does not permit lower case letters to be used for these records. Every header and EOF had the same errors reported. Shown below is the error report for the first label. See the Appendix to this report for additional log files. The same errors were reported by TI's version of *Tapetool*.

VOL1CALS01

esther  
^^^^^^

4

\*\*\* ERROR (ANSI X3.27; 6.2.1) - A label shall be a record that shall have a length of 80 bytes. Each label shall be recorded within the first or only 80 byte positions of a block.

\*\*\* ERROR (ANSI X3.27; 8.1) - Unless otherwise stated, the characters in the labels shall be coded in accordance with ANSI X3.4-1986. The 57 characters used in the labels shall be those positions of the standard code table in ANSI X3.4-1986 listed on page 13 of ANSI X3.27-1987 (errors are marked by ^ and are printed as spaces in the label if necessary).

\*\*\* WARNING - This error will cause the software to misinterpret some of the label fields.

An additional seven notes were reported in the catalog file. All of these notes relate to an unexpected record length in the variable files.

D001                                      Document Declaration                      D/00027 02048/000001      Extracted

\*\*\* NOTE (MIL-STD-1840A; 5.2.1.3) - Unexpected maximum variable record size encountered. Header = 27, Expected = 260

Length for Recording Format Type D  
    shall be the maximum length of a Measured Data Unit (MDU).  
length record shall be contained  
    in an MDU. An MDU consists of a four byte Record Control Word (RCW)  
    followed immediately by the variable record.  
Word shall consist of four characters  
    that express the sum of the lengths of the RCW and the variable record.

Some of the errors relate to the tape label Record Length field for Type D files. Type D files contain variable length records that do not span blocks. All of the Type D files written on the tape were flagged with an illegal value for Record Length. The D001, D001G002, D001T001 and D001H003 files were expected to be Type D according to MIL-STD-1840A. The AFCTN Tapetool software is expecting a value of 260 in the Record Length field. It encountered a record length varying from 56 to 84. MIL-STD-1840A para. 5.2.1.3 requires the variable record size be a maximum of 256 bytes. ANSI X3.27 para. 7.2.3 further states that the length of a Record Control Word (RCW) must be included in a Measured Data Unit (MDU) record length computation. This adds four bytes to the 256 for an MDU total of 260 bytes. ANSI X3.27 para. 8.5.2.6 states that the Record Length field for Type D files shall contain the maximum length of an MDU. While MIL-STD-1840A permits variable length records. Some software programs are sensitive to the number 260 because it is used to limit the record size when unblocking data. Some systems need this value to declare the maximum allowable record size as an attribute of a file when it is created.

The tape was read using the XSoft CAPS read1840A utility without any reported errors.

The physical tape structure does not meet the CALS MIL-STD-1840A requirements.

### 3.2.2 Declaration and Header Fields

One error and one note were found in the Document Declaration file. The error was minor and relates to an invalid value for the dstsys record. This record must contain a value.

dstsys: NONE

\*\*\* ERROR (MIL-STD-1840A; 5.1.1.2) - Invalid value for 'dstsys: '.

\*\*\* NOTE (MIL-STD-1840A; 5.1.1.2) - The value for Destination System cannot be 'NONE'.

The data file had no reported errors.

This portion of the tape does not meet the MIL-STD-1840A requirements.

## 4. IGES Analysis

The tape contained two IGES files. These files were evaluated using IDA's *parser* and *verifier* set for CALS Class I. This utility reported that neither file meets the CALS MIL-D-28000A specification. The complete log files from this evaluation are included in the Appendix to this report.

The first reported error is a missing Start section. MIL-D-28000A requires a Start section and this section must contain information defined in para. 3.2.1.3.1. Further, the terminate section indicates that the Start section should contain 5 lines.

The utility identified entity 402 which is not permitted in a CALS Class I file.

---

\*\*\* Entity type: 402

WARNING 4038: Entity type is not allowed in CALS Class I.

WARNING 2492: Undefined line font value (0) specified for D 13.

The AFCTB has several tools for viewing IGES files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

An attempt to convert the files using ArborText's *iges2draw* utility resulted in an error message indicating that the files were not valid files.

The files were read using AUTODESK's *AutoCAD R12* with translator version 5.1. This utility reported that the files were not valid.

An attempt to convert the files using Cadkey's *ig2c* utility resulted in an error indicating that the files were not valid IGES files.

An attempt to read into Carberry's *CADLeaf* software resulted in an error message indicating bad files.

The files were read using IDA's *IGESView* and *IGESView for Windows* with a reported error. It was noted that the line thickness was set high. The text could not be broken out enough to read, even when zooming into areas on the screen.

An attempt to read using ITI's *IGESWorks* resulted in an error message indicating that the files were not valid IGES files.

An attempt to convert using Rosetta Technologies' *Prepare* resulted in an error message indicating bad files.

The IGES files do not meet the CALS MIL-D-28000A specification.

## 5. SGML Analysis

The AFCTB has several parsers available for evaluating submitted DTD and Text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report. Changes to DTD or Text files required by each system are not documented in the report.

The Text and DTD files from this document were evaluated using Exoterica's *Validator exl* parser. See the compiled results below.

The Text and DTD files from this document were tested using Exoterica's *XGMLNormalizer* parser. See the compiled results below.

The Text and DTD files from the tape were evaluated using McAfee & McAdam's *Sema Mark-it* parser. See the compiled results below.

The Text and DTD files from the tape were evaluated using the Public Domain *sgmls* parser. See the compiled results below.

The DTD was parsed using the above software packages. The initial errors pointed to external entities not present in the AFCTB systems. Both of these entities appear to be unique to ArborText. Both of these entities were commented out in an attempt to parse the DTD.

```
<!ENTITY % atimath PUBLIC "-//ArborText//ELEMENTS Math  
Equation Structures//EN"> %atimath;
```

```
<!ENTITY % ereview PUBLIC "-//ArborText//ELEMENTS Electronic  
Review Structures 910428//EN"> %ereview;
```

The next set of errors point to the two external graphic entities. The DTD did not reference the IGES file type in a notation. This was also added.

---

The next set of errors relate to undefined entities. "F", "FD", "MRINFO", "MODREQ", "B1", "B2", "F3", "F8", and "F9" are some of the undefined entities.

The error logs from the parsing procedures are shown in the Appendix to this report.

The SGML files did not meet the CALS MIL-D-28001A specification.

## **6. Raster Analysis**

No Raster files were included on this tape.

## **7. CGM Analysis**

No Computer Graphics Metafile (CGM) files were included on this tape.

## 8. Conclusions and Recommendations

The tape from Raytheon had errors in the physical structure. The tape also had errors in the CALS Document Declaration file. They do not meet the CALS MIL-STD-1840A requirements.

The IGES files had both basic IGES and CALS errors. The file could only be read using one tool in the AFCTB. The IGES files did not meet the CALS MIL-D-28000A specification.

The SGML files had many errors. They did not meet the CALS MIL-M-28001A specification.

The tape from Raytheon Equipment Division did not meet the CALS MIL-STD-1840A requirements.



## 9. Appendix A - Tapetool Report Logs

### 9.1 Tape Catalog

Texas Instruments Catalog Evaluation - Version 1.0; Release Number 1

Standards referenced:

- MIL-STD-1840A (1987) - Automated Interchange of Technical Information
- MIL-R-28003 (1988) - Digital Representation For Communication Of  
Illustration Data; CGM Application Profile
- ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes  
for Information Interchange
- ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Fri Jun 18 08:59:59 1993

MIL-STD-1840A File Catalog

File Set Directory: /cals/tt13/Set007

Tape Volume ID: CALS01

Page: 1

File Name	File Type	Record Format/ Block Length Length/Total	Selected/ Partial/ Extracted
D001	Document Declaration	D/00027 02048/000001	Extracted
*** NOTE (MIL-STD-1840A; 5.2.1.3) - Unexpected maximum variable record size encountered. Header = 27, Expected = 260			
Length for Recording Format Type D shall be the maximum length of a Measured Data Unit (MDU). length record shall be contained in an MDU. An MDU consists of a four byte Record Control Word (RCW) followed immediately by the variable record. Word shall consist of four characters that express the sum of the lengths of the RCW and the variable record.			
D001G002	Document Type Declaration	D/00135 02048/000020	Extracted
*** NOTE - Unexpected maximum variable record size encountered. Header = 135, Expected = 260			
D001H003	Output Specification	D/00133 02048/000042	Extracted
*** NOTE - Unexpected maximum variable record size encountered. Header = 133, Expected = 260			
D001Q004	IGES	F/00080 02000/000081	Extracted

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D001Q005                    IGES                    F/00080 02000/000142   Extracted  
D001T001                    SGML Text                    D/00097 02048/000015   Extracted  
\*\*\* NOTE (MIL-STD-1840A; 5.2.1.4) - Unexpected maximum variable record size  
         encountered. Header = 97, Expected = 260

Catalog Process terminated with 0 error(s), 0 warning(s), and 7 note(s).

---

## 9.2 Tape Evaluation Log

Texas Instruments Tape Evaluation - Version 1.0; Release Number 1

Standards referenced:

ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes  
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Fri Jun 18 08:59:25 1993

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1CAL501

esther  
^^^^^^

4

- \*\*\* ERROR (ANSI X3.27; 6.2.1) - A label shall be a record that shall have a length of 80 bytes. Each label shall be recorded within the first or only 80 byte positions of a block.
- \*\*\* ERROR (ANSI X3.27; 8.1) - Unless otherwise stated, the characters in the labels shall be coded in accordance with ANSI X3.4-1986. The 57 characters used in the labels shall be those positions of the standard code table in ANSI X3.4-1986 listed on page 13 of ANSI X3.27-1987 (errors are marked by ^ and are printed as spaces in the label if necessary).
- \*\*\* WARNING - This error will cause the software to misinterpret some of the label fields.

Label Identifier: VOL1  
Volume Identifier: CAL501  
Volume Accessibility:  
Implementation Identifier:  
Owner Identifier: esther  
Label Standard Version: 4

- \*\*\* ERROR (ANSI X3.27; 8.3.1.7) - The characters in Owner Identifier must be a-characters.

HDR1D001

00010001000100 92302 99364 000000Unix4.2-deman  
^^^ ^^^^^

- \*\*\* ERROR (ANSI X3.27; 6.2.1) - A label shall be a record that shall have a length of 80 bytes. Each label shall be recorded within the first or only 80 byte positions of a block.

---

\*\*\* ERROR (ANSI X3.27; 8.1) - Unless otherwise stated, the characters in the labels shall be coded in accordance with ANSI X3.4-1986. The 57 characters used in the labels shall be those positions of the standard code table in ANSI X3.4-1986 listed on page 13 of ANSI X3.27-1987 (errors are marked by ^ and are printed as spaces in the label if necessary).

\*\*\* WARNING - This error will cause the software to misinterpret some of the label fields.

Label Identifier: HDR1  
File Identifier: D001  
File Set Identifier:  
File Section Number: 0001  
File Sequence Number: 0001  
Generation Number: 0001  
Generation Version Number: 00  
Creation Date: 92302  
Expiration Date: 99364  
File Accessibility:  
Block Count: 000000  
Implementation Identifier: Unix4.2-deman

\*\*\* ERROR (ANSI X3.27; 8.5.1.14) - The characters in Implementation Identifier must be a-characters.

HDR2D0204800027

00

Label Identifier: HDR2  
Recording Format: D  
Block Length: 02048  
Record Length: 00027  
Offset Length: 00

\*\*\*\*\* Tape Mark \*\*\*\*\*

\*\*\*\*\* Tape Mark \*\*\*\*\*

Minimum Block Size Found = 2048 Bytes.  
Maximum Block Size Found = 2048 Bytes.

Number of data blocks read = 1.

EOF1D001

00010001000100 92302 99364 000001Unix4.2-deman  
                  ^^^      ^^^^^

\*\*\* ERROR (ANSI X3.27; 6.2.1) - A label shall be a record that shall have a length of 80 bytes. Each label shall be recorded within the first or only 80 byte positions of a block.

---

---

\*\*\* ERROR (ANSI X3.27; 8.1) - Unless otherwise stated, the characters in the labels shall be coded in accordance with ANSI X3.4-1986. The 57 characters used in the labels shall be those positions of the standard code table in ANSI X3.4-1986 listed on page 13 of ANSI X3.27-1987 (errors are marked by ^ and are printed as spaces in the label if necessary).

\*\*\* WARNING - This error will cause the software to misinterpret some of the label fields.

Label Identifier: EOF1  
File Identifier: D001  
File Set Identifier:  
File Section Number: 0001  
File Sequence Number: 0001  
Generation Number: 0001  
Generation Version Number: 00  
Creation Date: 92302  
Expiration Date: 99364  
File Accessibility:  
Block Count: 000001  
Implementation Identifier: Unix4.2-deman

\*\*\* ERROR (ANSI X3.27; 8.5.1.14) - The characters in Implementation Identifier must be a-characters.

EOF2D0204800027

00

Label Identifier: EOF2  
Recording Format: D  
Block Length: 02048  
Record Length: 00027  
Offset Length: 00

\*\*\*\*\* Tape Mark \*\*\*\*\*

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

\*\*\*\*\* Tape Mark \*\*\*\*\*

##### End of Volume CALS01 #####

##### End Of Tape File Set #####

Rewinding tape to load point...  
Deallocating /dev/rmt0...

Tape Import Process terminated with 39 error(s), 13 warning(s),  
and 2 note(s).

## 9.3 Tape File Set Validation Log

Texas Instruments File Set Evaluation - Version 1.0; Release Number 1

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

MIL-STD-804C (1990) - Formats and Coding of Aperture, Camera, Copy,  
and Tabulating Cards

MIL-R-28002 (1989) - Raster Graphics Representation In Binary  
Format, Requirements For

Fri Jun 18 09:00:01 1993

MIL-STD-1840A File Set Evaluation Log

File Set: Set007

Found file: D001

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: ArborText

srcdocid: TO

srcrelid: NONE

chglvl: ORIGINAL

dteisu: 19921029

dstsys: NONE

\*\*\* ERROR (MIL-STD-1840A; 5.1.1.2) - Invalid value for 'dstsys: '.

\*\*\* NOTE (MIL-STD-1840A; 5.1.1.2) - The value for Destination  
System cannot be 'NONE'.

dstdocid: TO

dstrelid: NONE

dtetrm: 19921029

dlvacc: NONE

filcnt: T1,G1,H1,Q2

ttlcls: UNCLASSIFIED

doccls: UNCLASSIFIED

doctyp: Technical Order

docttl: NONE

1 error(s), 0 warning(s), and 1 note(s) were encountered  
in Document Declaration File D001.

Searching for data files...

Found file: D001G002

Extracting Document Type Declaration Header Records...

Evaluating Document Type Declaration Header Records...

srcdocid: TO  
dstdocid: TO  
notes: DTD

Saving Document Type Declaration Header File: D001G002\_HDR  
Saving Document Type Declaration Data File: D001G002\_DTD

Found file: D001H003  
Extracting Output Specification Header Records...  
Evaluating Output Specification Header Records...

srcdocid: TO  
dstdocid: TO  
notes: FOSI

Saving Output Specification Header File: D001H003\_HDR  
Saving Output Specification Data File: D001H003\_OSP

Found file: D001Q004  
Extracting IGES Header Records...  
Evaluating IGES Header Records...

srcdocid: TO  
dstdocid: TO  
txtfilid: W  
figid: b1  
srcgph: pansht5.igs  
doccls: UNCLASSIFIED  
notes: jimmied header data lines test...

Saving IGES Header File: D001Q004\_HDR  
Saving IGES Data File: D001Q004\_IGS

Found file: D001Q005  
Extracting IGES Header Records...  
Evaluating IGES Header Records...

srcdocid: TO  
dstdocid: TO  
txtfilid: W  
figid: b2  
srcgph: pansht6.igs  
doccls: UNCLASSIFIED  
notes: jimmied header data lines test...

---

Saving IGES Header File: D001Q005\_HDR  
Saving IGES Data File: D001Q005\_IGS

Found file: D001T001  
Extracting SGML Text Header Records...  
Evaluating SGML Text Header Records...

srcdocid: TO  
dstdocid: TO  
txtfilid: W  
doccls: UNCLASSIFIED  
notes: SGML

Saving SGML Text Header File: D001T001\_HDR  
Saving SGML Text Data File: D001T001\_TXT

Evaluating Document D001 numbering scheme...  
No errors were encountered during numbering scheme evaluation.  
Numbering scheme evaluation complete.

Checking Document D001 file count...  
No errors were encountered during file count verification.  
File Count verification complete.

Saving Document D001 Map File: MAP.LIS

A total of 1 error(s), 0 warning(s), and 1 note(s) were  
encountered in Document D001.

A grand total of 1 error(s), 0 warning(s), and 1 note(s) were  
encountered in File Set Set007.



## 10. Appendix B - Detailed IGES Analysis

### 10.1 File D001Q004

#### 10.1.1 Parser/Verifier Log

```
*****
*****  IGES PARSE/VERIFIER  *****
*****      MARCH 1993      *****
*****  IGES Data Analysis  *****
*****    (708) 344-1815    *****
*****
```

Input file is /novell/9363/D001Q004\_IGS

Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)

Today is June 18, 1993 9:53 AM

```
*****
*****  CHECK FILE SYNTAX  *****
*****
```

WARNING 2412: Start section not found.

WARNING 2463: Line count mismatch: Start section: 0 Terminate:  
5.

Section	Records
Start	0
Global	3
Directory	1250 ( 625 Entities)
Parameter	750
Terminate	1

NITPICK 2489: Excess precision in real constant (0.0599999) for Strings[1].WT of  
D 1.

NITPICK 2489: Excess precision in real constant (0.0960001) for Strings[1].WT of  
D 437.

NITPICK 2489: Excess precision in real constant (0.0960001) for Strings[1].WT of  
D 439.

NITPICK 2489: Excess precision in real constant (0.0960001) for Strings[1].WT of  
D 445.

NITPICK 2489: Excess precision in real constant (0.0599999) for Strings[1].WT of  
D 447.

NITPICK 2489: Excess precision in real constant (0.0960001) for Strings[1].WT of  
D 1003.  
NITPICK 2489: Excess precision in real constant (0.0600001) for Strings[1].WT of  
D 1009.  
NITPICK 2489: Excess precision in real constant (0.0960001) for Strings[1].WT of  
D 1075.  
NITPICK 2489: Excess precision in real constant (0.0599999) for Strings[1].WT of  
D 1081.

\*\*\*\*\*  
\*\*\*\*\* SUMMARY AND STATISTICS \*\*\*\*\*  
\*\*\*\*\*

\*\*\* File and Product Name Information \*\*\*

File name from sender = 'pansht5.igs'  
File creation Date.Time = '911219.100142'  
Model change Date.Time = ''  
Author = 'author'  
Department = 'organization'  
Product name from sender = 'sending'  
Destination product name = 'receiving'

\*\*\* Parameter Delimiters \*\*\*

Delimiter = ','  
Terminator = ';'

\*\*\* Originating System Data \*\*\*

System ID = 'PicED Version 7.0\_1.8'  
Preprocessor version = 'PicED IGES translator V2.1'  
Specification version = 6 (IGES 4.0)

\*\*\* Precision levels \*\*\*

Integer bits = 32  
Floating point - Exponent = 38 Mantissa = 6  
Double precision - Exponent = 308 Mantissa = 15

\*\*\* Global Model Data \*\*\*

Model scale = 1.0000E+00  
Unit flag = 1  
Units = 'IN'  
Line weights = 5  
Maximum line thickness = 1.500000E-01  
Minimum line thickness = 3.000000E-02

---

Granularity = 1.000000E-03

Maximum coordinate = 0.000000E+00

CAUTION 2316: Maximum intended coordinate value of 0.000000E+00 will be defaulted to zero.

Drafting standard applicable to original data is not specified.

\*\*\* Status Flag Summary \*\*\*

Blank status:	Visible	625
	Blanked	0
Independence:	Independent	104
	Physically Subordinate	1
	Logically Subordinate	520
	Totally Subordinate	0
Entity use:	Geometry	397
	Annotation	226
	Definition	0
	Other	2
	Logical/Positional	0
	2D parametric	0
	Construction geometry	0
	Not Specified	0
Hierarchy:	Structure DE applies	625
	Subordinate DE applies	0
	Hierarchy property applies	0
	Not Specified	0

\*\*\* Entity Occurrence Counts \*\*\*

Entity	Form	Level	Count	Type
-----	----	-----	-----	----
100	0	0	9	Circular arc
106	11	0	7	Copious data - Piecewise planar, linear string(2D path)
106	63	0	3	Simple closed planar curve
110	0	0	370	Line
212	0	0	223	General note
230	0	0	3	Sectioned area (Standard Crosshatching)
402	7	0	1	Group without back-pointers instance
404	0	0	1	Drawing
406	15	0	5	Property - Name
406	16	0	1	Property - Drawing size

406	17	0	1	Property - Drawing units
410	0	0	1	View - Orthographic parallel

\*\*\* Entity Count by Level \*\*\*

Level	Count
0	625

\*\*\* Labeling Information \*\*\*

0% of the entities are labeled.

Unlabeled	625
-----------	-----

\*\*\* Line Fonts Used in Data \*\*\*

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	-	-	Undefined
9	-	-	10	-	358	-	-	Solid
-	-	-	-	-	12	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

\*\*\* Line Widths Used in Data \*\*\*

Weight	Count	Width
Defaulted	1	(0.0300)
1	564	(0.0300)
3	60	(0.0900)

\*\*\* Colors Used in Data \*\*\*

Defaulted	4
White	621

\*\*\*\*\*  
 \*\*\*\*\* ENTITY ANALYSIS \*\*\*\*\*  
 \*\*\*\*\*

\*\*\* Entity type: 100

\*\*\* Entity type: 106

\*\*\* Entity type: 110

-- 370 lines averaging 1.704346E-01 units --

\*\*\* Entity type: 212

223 text strings in data file.

Average text aspect ratio in file is 0.8563117.

Minimum text aspect ratio in file is 0.6666667.

Maximum text aspect ratio in file is 0.9872293.

#### FONTS USED IN FILE

FONT	COUNT	NAME
1	223	Default ASCII Style

\*\*\* Entity type: 230

\*\*\* Entity type: 402

WARNING 4038: Entity type is not allowed in CALS Class I.

WARNING 2492: Undefined line font value (0) specified for D 13.

\*\*\* Entity type: 404

NITPICK 2074: Entity use flag must be 1 for Drawing entity at D 1249.

Drawing at D 1249 contains 1 views.

NITPICK 2289: View (D 1247) is not logically subordinate to drawing at D 1249.

Drawing at D 1249 contains 0 annotation entities.

\*\*\* Entity type: 406

WARNING 2492: Undefined line font value (0) specified for D 1115.

WARNING 2492: Undefined line font value (0) specified for D 1153.

WARNING 2492: Undefined line font value (0) specified for D 1185.

\*\*\* Entity type: 410

NITPICK 2073: Entity use flag must be 1 for View entity at D 1247.

Scale of view at D 1247 is 1.000000E+00.

Orthographic View entity at D 1247 has 0 clipping planes specified.

XMIN = Not Set XMAX = Not Set

YMIN = Not Set      YMAX = Not Set  
ZMIN = Not Set      ZMAX = Not Set

\*\*\* Message Summary \*\*\*

2011: 1 Invalid subordinate relationships.  
2016: 2 Invalid entity use flag.  
2037: 2 Structural errors.  
2038: 4 Invalid Line font values.  
4018: 1 Illegal entity types

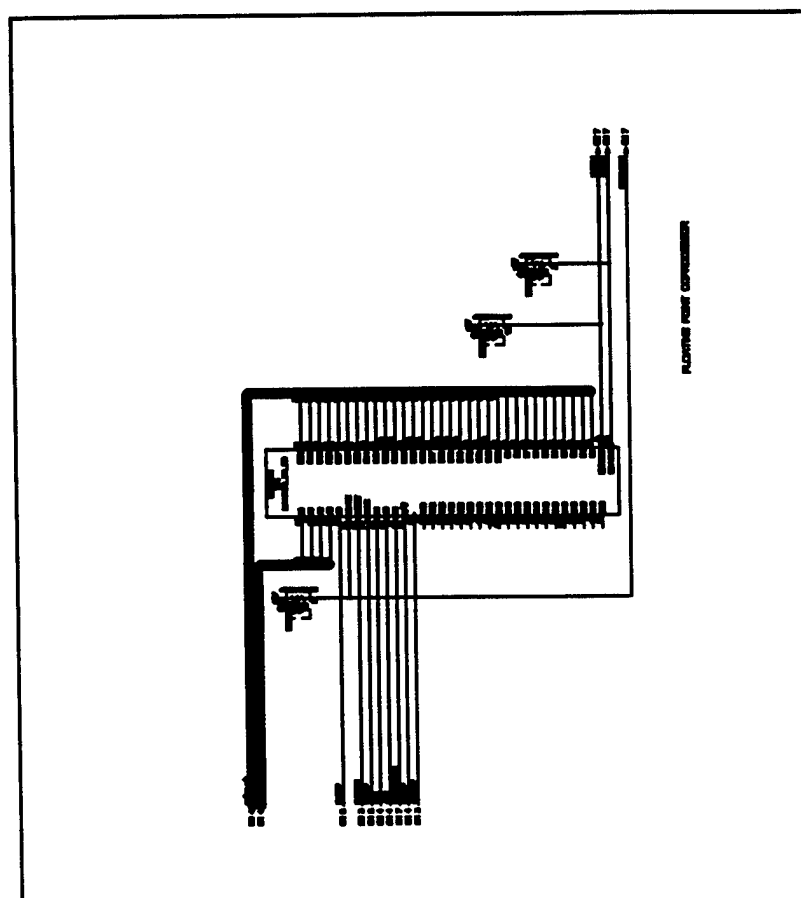
\*\*\* Error Summary \*\*\*

0 fatal errors  
0 severe errors  
0 errors  
7 warnings  
1 cautions  
12 nitpicks  
0 notes

\*\*\* End of Analysis of /novell/9363/D001Q004\_IGS \*\*\*

---

## 10.1.2 Output IGESView



## 10.2 File D001Q005

### 10.2.1 Parser/Verifier Log

```
*****
***** IGES PARSE/VERIFIER *****
***** MARCH 1993 *****
***** IGES Data Analysis *****
***** (708) 344-1815 *****
*****
```

Input file is /novell/9363/D001Q005\_IGS

Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)

Today is June 18, 1993 9:53 AM

```
*****
***** CHECK FILE SYNTAX *****
*****
```

WARNING 2412: Start section not found.

WARNING 2463: Line count mismatch: Start section: 0 Terminate:  
5.

Section	Records
Start	0
Global	3
Directory	2098 ( 1049 Entities)
Parameter	1426
Terminate	1

NITPICK 2489: Excess precision in real constant (0.0599999) for Strings[1].WT of  
D 1.  
NITPICK 2489: Excess precision in real constant (0.0599999) for Strings[1].WT of  
D 3.  
NITPICK 2489: Excess precision in real constant (0.0599999) for Strings[1].WT of  
D 5.  
NITPICK 2489: Excess precision in real constant (0.0599999) for Strings[1].WT of  
D 7.  
NITPICK 2489: Excess precision in real constant (0.0599999) for Strings[1].WT of  
D 9.  
NITPICK 2489: Excess precision in real constant (0.0599999) for Strings[1].WT of  
D 11.  
NITPICK 2489: Excess precision in real constant (0.0599999) for Strings[1].WT of



---

D 13.  
NITPICK 2489: Excess precision in real constant (0.0599999) for Strings[1].WT of  
D 15.  
NITPICK 2489: Excess precision in real constant (0.0599999) for Strings[1].WT of  
D 17.  
NITPICK 2489: Excess precision in real constant (0.0599999) for Strings[1].WT of  
D 19.  
NITPICK 2489: Messages regarding excess precision suppressed.

\*\*\*\*\*  
\*\*\*\*\* SUMMARY AND STATISTICS \*\*\*\*\*  
\*\*\*\*\*

\*\*\* File and Product Name Information \*\*\*

File name from sender = 'pansht6.igs'  
File creation Date.Time = '911219.101037'  
Model change Date.Time = ''  
Author = 'author'  
Department = 'organization'  
Product name from sender = 'sending'  
Destination product name = 'receiving'

\*\*\* Parameter Delimiters \*\*\*

Delimiter = ','  
Terminator = ';'

\*\*\* Originating System Data \*\*\*

System ID = 'PicED Version 7.0\_1.8'  
Preprocessor version = 'PicED IGES translator V2.1'  
Specification version = 6 (IGES 4.0)

\*\*\* Precision levels \*\*\*

Integer bits = 32  
Floating point - Exponent = 38 Mantissa = 6  
Double precision - Exponent = 308 Mantissa = 15

\*\*\* Global Model Data \*\*\*

Model scale = 1.0000E+00  
Unit flag = 1  
Units = 'IN'  
Line weights = 5  
Maximum line thickness = 1.500000E-01  
Minimum line thickness = 3.000000E-02

---

Granularity = 1.000000E-03

Maximum coordinate = 0.000000E+00

CAUTION 2316: Maximum intended coordinate value of 0.000000E+00 will be defaulted to zero.

Drafting standard applicable to original data is not specified.

\*\*\* Status Flag Summary \*\*\*

Blank status:	Visible	1049
	Blanked	0
Independence:	Independent	192
	Physically Subordinate	1
	Logically Subordinate	856
	Totally Subordinate	0
Entity use:	Geometry	679
	Annotation	368
	Definition	0
	Other	2
	Logical/Positional	0
	2D parametric	0
	Construction geometry	0
	Not Specified	0
Hierarchy:	Structure DE applies	1049
	Subordinate DE applies	0
	Hierarchy property applies	0
	Not Specified	0

\*\*\* Entity Occurrence Counts \*\*\*

Entity	Form	Level	Count	Type
-----	----	-----	-----	----
100	0	0	34	Circular arc
106	11	0	49	Copious data - Piecewise planar, linear string(2D path)
106	63	0	10	Simple closed planar curve
110	0	0	571	Line
212	0	0	358	General note
230	0	0	10	Sectioned area (Standard Crosshatching)
402	7	0	1	Group without back-pointers instance
404	0	0	1	Drawing
406	15	0	12	Property - Name
406	16	0	1	Property - Drawing size

406	17	0	1	Property - Drawing units
410	0	0	1	View - Orthographic parallel

\*\*\* Entity Count by Level \*\*\*

Level	Count
0	1049

\*\*\* Labeling Information \*\*\*

0% of the entities are labeled.

Unlabeled 1049

\*\*\* Line Fonts Used in Data \*\*\*

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	-	-	Undefined
34	-	-	59	-	543	-	-	Solid
-	-	-	-	-	28	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

\*\*\* Line Widths Used in Data \*\*\*

Weight	Count	Width
Defaulted	1	(0.0300)
1	966	(0.0300)
3	82	(0.0900)

\*\*\* Colors Used in Data \*\*\*

Defaulted	17
White	1032

\*\*\*\*\*  
 \*\*\*\*\* ENTITY ANALYSIS \*\*\*\*\*  
 \*\*\*\*\*

\*\*\* Entity type: 100

\*\*\* Entity type: 106

\*\*\* Entity type: 110

-- 571 lines averaging 1.298137E-01 units --

\*\*\* Entity type: 212

358 text strings in data file.

Average text aspect ratio in file is 0.8581912.

Minimum text aspect ratio in file is 0.6666639.

Maximum text aspect ratio in file is 0.9914530.

#### FONTS USED IN FILE

FONT	COUNT	NAME
------	-------	------

1	358	Default ASCII Style
---	-----	---------------------

\*\*\* Entity type: 230

\*\*\* Entity type: 402

WARNING 4038: Entity type is not allowed in CALS Class I.

WARNING 2492: Undefined line font value (0) specified for D 25.

\*\*\* Entity type: 404

NITPICK 2074: Entity use flag must be 1 for Drawing entity at D 2097.

Drawing at D 2097 contains 1 views.

NITPICK 2289: View (D 2095) is not logically subordinate to drawing at D 2097.

Drawing at D 2097 contains 0 annotation entities.

WARNING 2492: Undefined line font value (0) specified for D 2097.

\*\*\* Entity type: 406

WARNING 2492: Undefined line font value (0) specified for D 1887.

WARNING 2492: Undefined line font value (0) specified for D 1931.

WARNING 2492: Undefined line font value (0) specified for D 1951.

WARNING 2492: Undefined line font value (0) specified for D 1961.

WARNING 2492: Undefined line font value (0) specified for D 1985.

WARNING 2492: Undefined line font value (0) specified for D 1991.

WARNING 2492: Undefined line font value (0) specified for D 1999.

WARNING 2492: Undefined line font value (0) specified for D 2029.

WARNING 2492: Messages regarding undefined line font suppressed.

\*\*\* Entity type: 410

NITPICK 2073: Entity use flag must be 1 for View entity at D 2095.

Scale of view at D 2095 is 1.000000E+00.

Orthographic View entity at D 2095 has 0 clipping planes specified.

XMIN = Not Set XMAX = Not Set

YMIN = Not Set YMAX = Not Set

ZMIN = Not Set ZMAX = Not Set

\*\*\* Message Summary \*\*\*

2011: 1 Invalid subordinate relationships.

2016: 2 Invalid entity use flag.

2037: 2 Structural errors.

2038: 17 Invalid Line font values.

4018: 1 Illegal entity types

\*\*\* Error Summary \*\*\*

0 fatal errors

0 severe errors

0 errors

20 warnings

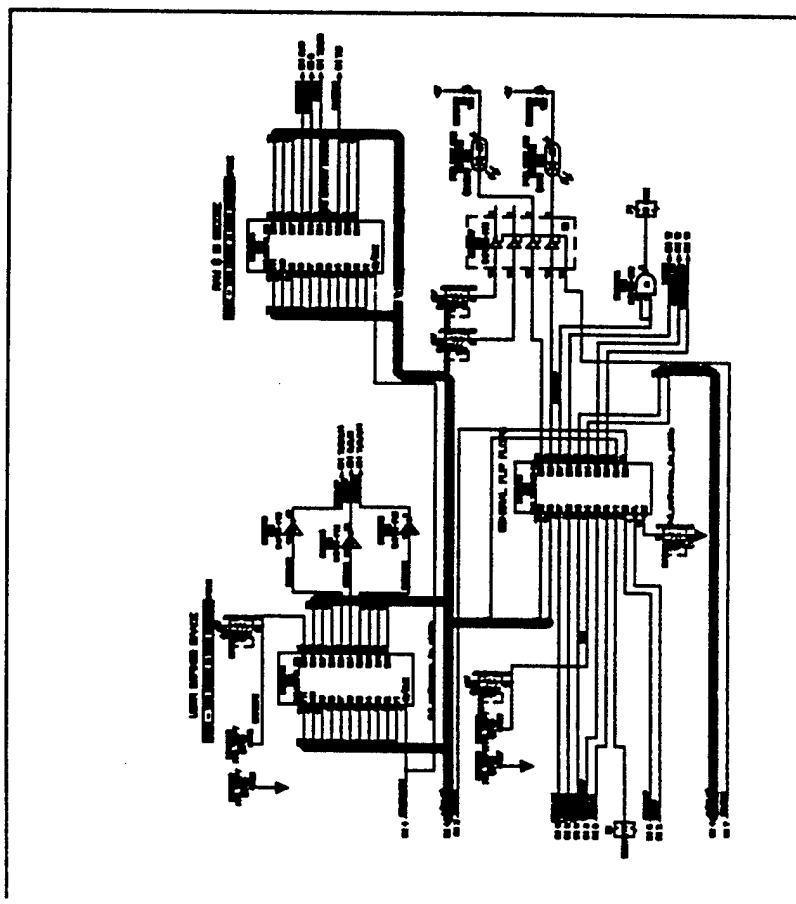
1 cautions

134 nitpicks

0 notes

\*\*\* End of Analysis of /novell/9363/D001Q005\_IGS \*\*\*

## 10.2.2 Output IGESView



## 11. Appendix C - Detailed SGML Analysis

### 11.1 Parser Log

SGML Document Type Definition Parser  
An SGML System Conforming to  
International Standard ISO 8879  
Standard Generalized Markup Language

Log file: '9363.LOG'  
SDO File: 'ctndocl.sdo'  
Namecase General is yes.  
Namecase Entity is no.  
Parsing DTD file: '9363.dtd'

DTD0092: The following 'generic identifiers' have not been declared:  
    'MRINFO, MODREQ, F, FD'  
    In declaration: '<![['.  
    In declaration: '<![['.  
    In declaration: '<![['.  
    In declaration: '<!DOCTYPE'.

DTD0096: The generic ID SHORTTITLE has not been used in any content  
model, inclusion, or as a doctype element.

DTD does not conform to ISO 8879 standard due to these errors:  
    Syntax error count: 1  
    .DTO file not created due to parsing errors.

Program status code: 5.

### 11.2 Exoterica Validator exl

```
<!-- Entity has no name, system id or public id in formal file -->.
<!-- **Warning**:
  An element with mixed content should permit data characters ("#PCDATA")
  everywhere.
  The element being declared is "NOTICE".
  (((#PCDATA | ftnref | xref | indxflag | verbatim | emergency |
  ^^^^^^
-->
<!-- **Warning**:
  An element with mixed content should permit data characters ("#PCDATA")
  everywhere.
```

---

---

```
The element being declared is "INTERNATLSTD".
(((#PCDATA | ftnref | xref | indxflag | verbatim | emergency |
      ^^^^^^
-->
<!-- **Warning**:
  An element with mixed content should permit data characters ("#PCDATA")
  everywhere.
  The element being declared is "HOWTOUSE".
  (((#PCDATA | ftnref | xref | indxflag | verbatim | emergency |
        ^^^^^^
-->
<!-- **Warning**:
  An element with mixed content should permit data characters ("#PCDATA")
  everywhere.
  The element being declared is "ITEM".
  (((#PCDATA | ftnref | xref | indxflag | verbatim | emergency |
        ^^^^^^
-->
<!-- **Warning**:
  An element with mixed content should permit data characters ("#PCDATA")
  everywhere.
  The element being declared is "DEF".
  (((#PCDATA | ftnref | xref | indxflag | verbatim | emergency |
        ^^^^^^
-->
<!-- **Warning** in "9363.sgm", line 1872:
  An element with mixed content should permit data characters ("#PCDATA")
  everywhere.
  The element being declared is "CALLOUT".
  (#PCDATA | graphic)
      /\
-->
<!-- **Warning**:
  An element with mixed content should permit data characters ("#PCDATA")
  everywhere.
  The element being declared is "ENTRY".
  (((#PCDATA | ftnref | xref | indxflag | verbatim | emergency |
        ^^^^^^
-->
<!-- **Warning**:
  An element with mixed content should permit data characters ("#PCDATA")
  everywhere.
  The element being declared is "FTNOTE".
  (((#PCDATA | ftnref | xref | indxflag | verbatim | emergency |
        ^^^^^^
-->
<!-- **Warning** in "9363.sgm", line 2380:
```

---



---

```
An element name specified in a USEMAP declaration, ATTLIST declaration or
content model is not defined by an ELEMENT declaration.
The element name is "F".
-->
<!-- **Warning** in "9363.sgm", line 2380:
  An element name specified in a USEMAP declaration, ATTLIST declaration or
  content model is not defined by an ELEMENT declaration.
  The element name is "FD".
-->
<!-- **Warning** in "9363.sgm", line 2380:
  An element name specified in a USEMAP declaration, ATTLIST declaration or
  content model is not defined by an ELEMENT declaration.
  The element name is "MODREQ".
-->
<!-- **Warning** in "9363.sgm", line 2380:
  An element name specified in a USEMAP declaration, ATTLIST declaration or
  content model is not defined by an ELEMENT declaration.
  The element name is "MRINFO".
-->
<!-- **Error** in "9363.sgm", line 2380:
  A notation name used in an ENTITY declaration must be declared.
  The notation "IGS" is used in the declaration of entity "secur".
-->
<!-- **Error** in "9363.sgm", line 3305:
  For every value specified for an IDREF attribute, there must be an element
  with the value specified for its ID attribute.
  For IDREF value "T4".
-->
<!-- **Warning** in "9363.sgm", line 3305:
  There is no element with an IDREF or IDREFS attribute value equal to a
  specified ID value.
  The unreferenced ID attribute value is "P75".
-->
<!-- 2 errors and 13 warnings reported. -->
```

### 11.3 Exoterica XGMLNormalizer Parser

```
C:\XGML\XGMLNORM.EXE --
Error on line 923 in file i:\9363\t001.txt:
No element with ID declared for IDREF.
For IDREF 'F9'.
```

---

## 11.4 Sema Mark-it Log

```
<!--*** file:\XVALID\9363.SGM line:852 pos:19025
Warning: Element F, used in the model of element ADDRESS,
has not been declared in the DTD.-->

<!--*** file:\XVALID\9363.SGM line:1428 pos:25668
Warning: Element FD, used in the model of element DEF,
has not been declared in the DTD.-->

<!--*** file:\XVALID\9363.SGM line:403 pos:13423
Warning: Element MRINFO, used in the model of element DOC,
has not been declared in the DTD.-->

<!--*** file:\XVALID\9363.SGM line:403 pos:13423
Warning: Element MODREQ, used in the model of element DOC,
has not been declared in the DTD.-->
<!--*** file: line:0 pos:1796800516
The name IGS has not been defined as a notation name.
(Notations names must be declared before being used.)-->
<GRAPHIC SECURITY="U" VPLACE="TOP" HPLACE="LEFT" VSCALE="90" HSCALE="90"
BOARDNO="pansht6.igs" SCILEVEL="0"></FIGURE></PARA0></SECTION></CHAPTER></BODY>
<!--*** file:\XVALID\9363.SGM line:3160 pos:58725
Entered IDREF reference value (F10) has not been used as an ID for
an element in the currently open document.-->

<!--*** file:\XVALID\9363.SGM line:2641 pos:42521
Entered IDREF reference value (F3) has not been used as an ID for
an element in the currently open document.-->

<!--*** file:\XVALID\9363.SGM line:2941 pos:51344
Entered IDREF reference value (F6) has not been used as an ID for
an element in the currently open document.-->

<!--*** file:\XVALID\9363.SGM line:3049 pos:55168
Entered IDREF reference value (F8) has not been used as an ID for
an element in the currently open document.-->

<!--*** file:\XVALID\9363.SGM line:3185 pos:59587
Entered IDREF reference value (F9) has not been used as an ID for
an element in the currently open document.-->

<!--*** file:\XVALID\9363.SGM line:2942 pos:51420
Entered IDREF reference value (T4) has not been used as an ID for
an element in the currently open document.-->
```

---

---

## 11.5 Public Domain sgmls Log

sgmls: Error at 9363.dtd, line 63 in declaration parameter 5:  
Could not find external parameter entity "atimath"

sgmls: SGML error at 9363.dtd, line 64 at ";":  
No declaration for entity "%atimath"; reference ignored

sgmls: Error at 9363.dtd, line 309 in declaration parameter 5:  
Could not find external parameter entity "ereview"

sgmls: SGML error at 9363.dtd, line 310 at ";":  
No declaration for entity "%ereview"; reference ignored

sgmls: Warning at 9363.txt, line 8 at record start:  
Element "MRINFO" used in DTD but not defined

sgmls: Warning at 9363.txt, line 8 at record start:  
Element "FD" used in DTD but not defined

sgmls: Warning at 9363.txt, line 8 at record start:  
Element "F" used in DTD but not defined

sgmls: Warning at 9363.txt, line 8 at record start:  
Element "MODREQ" used in DTD but not defined

sgmls: SGML error at 9363.txt, line 8 at record start:  
Notation "IGS" not defined in DTD

sgmls: SGML error at 9363.txt, line 331 at "":  
Entity "B1" has undefined notation "IGS"  
Element structure: DOC BODY CHAPTER PARA0 SUBPARA1 FIGURE

sgmls: SGML error at 9363.txt, line 916 at "":  
Entity "B2" has undefined notation "IGS"  
Element structure: DOC BODY CHAPTER SECTION PARA0 FIGURE

sgmls: SGML error at 9363.txt, line 780 at "":  
XREFID = "F10" IDREF attribute ignored: referenced ID does not exist  
Element structure: DOC BODY CHAPTER SECTION PARA0 SUBPARA1 STEP1 PARA

sgmls: SGML error at 9363.txt, line 283 at "":  
XREFID = "F3" IDREF attribute ignored: referenced ID does not exist  
Element structure: DOC BODY CHAPTER PARA0 SUBPARA1 SUBPARA2 PARA

sgmls: SGML error at 9363.txt, line 261 at "":  
XREFID = "F3" IDREF attribute ignored: referenced ID does not exist  
Element structure: DOC BODY CHAPTER PARA0 SUBPARA1 SUBPARA2 PARA

sgmls: SGML error at 9363.txt, line 561 at "":  
XREFID = "F6" IDREF attribute ignored: referenced ID does not exist  
Element structure: DOC BODY CHAPTER PARA0 PARA

sgmls: SGML error at 9363.txt, line 696 at "":  
XREFID = "F8" IDREF attribute ignored: referenced ID does not exist  
Element structure: DOC BODY CHAPTER SECTION PARA0 SUBPARA1 STEP1 PARA

sgmls: SGML error at 9363.txt, line 669 at "":  
XREFID = "F8" IDREF attribute ignored: referenced ID does not exist  
Element structure: DOC BODY CHAPTER SECTION PARA0 SUBPARA1 STEP1 PARA

sgmls: SGML error at 9363.txt, line 805 at "":

XREFID = "F9" IDREF attribute ignored: referenced ID does not exist  
Element structure: DOC BODY CHAPTER SECTION PARA0 SUBPARA1 STEP1 PARA  
sgmls: SGML error at 9363.txt, line 562 at "":  
XREFID = "T4" IDREF attribute ignored: referenced ID does not exist  
Element structure: DOC BODY CHAPTER PARA0 PARA

TOTALCAP 132705/200000  
ENTCAP 11616/200000  
ENTCHCAP 5696/200000  
ELEMCAP 4736/200000  
GRPCAP 51232/200000  
EXGRPCAP 448/200000  
EXNMCAP 896/200000  
ATTCAP 37088/200000  
ATTCHCAP 513/200000  
AVGRPCAP 17216/200000  
IDCAP 2560/200000  
IDREFCAP 704/200000